TEJUS
CONSULTANTS

GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. S. K Keshavamurthy
Date of Testing	:	08-01-2019
Type of Mix	:	WBM
Sample I/D	:	WBM 1

Sample Location:	At plant	Date of Sampling:	08-01-2019
Type of material & Purpose:	WBM	Date of testing:	08-01-2019
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	616	616	6.16	93.84	95-100
22.4	2519	3135	31.35	68.65	60-80
11.2	1783	4918	49.18	50.82	40-60
4.75	1452	6370	63.70	36.30	25-40
2.36	1354	7724	77.24	22.76	15-30
0.6	861	8585	85.85	14.15	8.0-22.0
0.075	842	9427	94.27	5.73	0-8
Pan	573				
Total	10000				

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. S. K Kesahavamurthy		
Type of Material	WBM	**Proposed Use**	WBM
Sample Location	At plant	**Date of Sampling**	08-01-2019
		Date of Testing	08-01-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	859	76	783	51
16.0	12.5	1201	117	1084	119
12.5	10.0	454	74	380	65
10.0	6.3	500	65	435	39
Total		**3014**	**332**	**2682**	**274**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	11.02
Elongation Index(%):	10.22
Combined FI+EL (%)	21.23

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

TEJUS CONSULTANTS

Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. S. K Keshavamurthy		
Proposed Use	WBM	**Date of Sampling**	**08-01-2019**
Sample Location	**At plant**	**Date of Testing**	**08-01-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	358.00	345.00	350.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	270.00	273.00	271.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	88.00	72.00	79.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	24.58	20.87	22.57	
5	Average Aggregate impact value	(%)	22.67			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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AGGREGATE IMPACT VALUE
(IS: 2386 Part - 4)

Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05		
Client	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	M/s Tejus Consultants		
Contractor	Sri. S. K Keshavamurthy		
Proposed Use	WBM	**Date of Sampling**	**09-01-2019**
Sample Location	**At plant**	**Date of Testing**	**09-01-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	355.00	353.00	347.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	269.00	275.00	274.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	86.00	78.00	73.00	
4	Aggregate Impact Value (%)	(Wc/Wa)* 100	24.23	22.10	21.04	
5	Average Aggregate impact value	(%)	22.45			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

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GRADATION FOR WMM
(As per MORT&H 400-11)

Name of Work	:	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	:	M/s Tejus Consultants
Contractor	:	Sri. S. K Keshavamurthy
Date of Testing	:	09-01-2019
Type of Mix	:	WBM
Sample I/D	:	WBM 1

Sample Location:	At plant	Date of Sampling:	09-01-2019
Type of material & Purpose:	WBM	Date of testing:	09-01-2019
		Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained (gm)	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	612	612	6.12	93.88	95-100
22.4	2564	3176	31.76	68.24	60-80
11.2	1788	4964	49.64	50.36	40-60
4.75	1435	6399	63.99	36.01	25-40
2.36	1326	7725	77.25	22.75	15-30
0.6	865	8590	85.90	14.10	8.0-22.0
0.075	842	9432	94.32	5.68	0-8
Pan	568				
Total	10000				

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FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri. S. K Kesahavamurthy

Type of Material	WBM	Proposed Use	WBM
Sample Location	At plant	Date of Sampling	09-01-2019
		Date of Testing	09-01-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	8513	76	8437	52
16.0	12.5	1201	120	1081	123
12.5	10.0	454	78	376	62
10.0	6.3	500	66	434	40
Total		**10668**	**340**	**10328**	**277**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	3.19
Elongation Index(%):	2.68
Combined FI+EL (%)	5.87

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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. S. K Keshavamurthy
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	Proposed Use	PCC
Sample Location	At Site/Plant	Date of Sampling	26-01-2019
		Date of Testing	26-01-2019

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	80	80	2.67	97.33	95-100
20.00mm	1400	1480	49.33	50.67	30-70
10.00mm	970	2450	81.67	18.33	10-35
4.75mm	452	2902	96.73	3.27	0-5
Pan	98	3000	100.00	0.00	

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. S. K Keshavamurthy

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	Fine aggregate (River Sand/ M sand)	Proposed Use	concrete
Sample Location	At Site/Plant	Date of Sampling	26-01-2019
		Date of Testing	26-01-2019

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	210	210	7.00	93.00	90 - 100
2.36 mm	310	520	17.33	82.67	75 - 100
1.18 mm	410	930	31.00	69.00	55 - 90
0.600 mm	485	1415	47.17	52.83	35 -59
0.300 mm	750	2165	72.17	27.83	8-30
0.150 mm	620	2785	92.83	7.17	0 - 10
Pan	215	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri. S. K Keshavamurthy

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (River Sand/ M sand)	**Proposed Use**	PCC
Location/Source	At Site/Plant	**Date of Sampling**	26-01-2019
Period of Soaking	24 hours	**Date of Testing**	26-01-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		662	637	671	
B	Weight of oven - dry sample gm.		652	628	661	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1692	1675	1698	
E	Bulk specific gravity	B / (C + A - D)	2.661	2.650	2.665	2.659
G	Absorption (%)	(A - B) *100 / B	1.534	1.433	1.513	1.493

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Test Report on Cement

Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri. S. K Keshavamurthy
Sample ID	Cement
Date of Sample Tested	26-01-2019
Sample Submitted By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	35 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	375 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project:	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client:	Bruhat Bangalore Mahanagar Palike
Consultant:	TEJUS CONSULTANTS
Contractor:	Sri. S. K Keshavamurthy
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	01-02-2019	01-03-2019	28 days	8.130	22500	350	15.56	15.35
2	01-02-2019	01-03-2019	28 days	8.138	22500	346	15.38	
3	01-02-2019	01-03-2019	28 days	8.146	22500	340	15.11	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project:	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Client:	Bruhat Bangalore Mahanagar Palike
Consultant:	TEJUS CONSULTANTS
Contractor	Sri. S. K Keshavamurthy
Grade of concrete:	M15
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	01-02-2019	08-02-2019	7 days	8.120	22500	215	9.56	9.53
2	01-02-2019	08-02-2019	7 days	8.130	22500	219	9.73	
3	01-02-2019	08-02-2019	7 days	8.140	22500	209	9.29	

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05	
Consultants	TEJUS CONSULTANTS	
Contractor	Sri. S. K. Keshavamurthy	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	CONCRETE	
Sample Location	At Site/Plant	Date of Sampling	01-02-2019	
		Date of Testing	01-02-2019	

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	528	528	5.28	94.72	90-100
10.0	4695	5223	52.23	47.77	40-85
4.75	4555	9778	97.78	2.22	0-10
Pan	222	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike				
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05				
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore				
Contractor	Sri. S. K Keshavamurthy				
Total Weight:	10000	gms			

SIEVE ANALYSIS

Type of Material	20 mm down size		**Proposed Use**	Concrete	
Sample Location	Plant/At site		**Date of Sampling**	01-02-2019	
			Date of Testing	01-02-2019	
IS Sieve Size	**Weight Retained**	**Cum. Weight Retained**	**Cum. % Retained**	**Cum. % Passing**	**Spec. Limit (%) Passing**
40.00 mm	0	0	0	100	**100**
20.00 mm	262	262	2.62	97.38	**95 - 100**
10.00 mm	4832	5094	50.94	49.06	**25 - 55**
4.75 mm	4220	9314	93.14	6.86	**0 - 10**
Pan	686	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Providing and fixing Chainlink Fencing to abandoned Kogilu Quarry in ward no. 05
Consultants	Tejus Consultants, Bangalore
Contractor	Sri. S. K Keshavamurthy

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	Fine aggregate (River Sand/ M sand)	**Proposed Use**	concrete
Sample Location	At Site/Plant	**Date of Sampling**	01-02-2019
		Date of Testing	01-02-2019

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	210	210	7.00	93.00	90 - 100
2.36 mm	306	516	17.20	82.80	75 - 100
1.18 mm	422	938	31.27	68.73	55 - 90
600 mm	486	1424	47.47	52.53	35 -59
300 mm	710	2134	71.13	28.87	8-30
150 mm	632	2766	92.20	7.80	0 - 10
Pan	234	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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